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SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1930

No. 3

POWERS-KENNEDY CONTRACTING CORPORATION and ANTHONY G. FLECK
Defendants-Petitioners

v.

CONCRETE MIXING AND CONVEYING COMPANY
Plaintiff-Respondent

Respondent's Reply to Supplemental Brief for Petitioners on Reargument

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IN THE

SUPREME COURT OF THE UNITED STATES

POWERS-KENNEDY CONTRACTING CORPORATION and ANTHONY G. FLECK, *Defendants-Petitioners,* v. CONCRETE MIXING AND CONVEYING COMPANY, *Plaintiff-Respondent.*	No. 3. OCTOBER TERM, 1930.

RESPONDENT'S REPLY TO SUPPLEMENTAL BRIEF FOR PETITIONERS ON REARGUMENT.

The issues before the court are fully discussed in respondent's main brief herein (formerly No. 501, Oct. Term, 1928), to which the court is referred for a full presentation of respondent's case. This supplemental brief is limited to the questions presented in petitioners' supplemental brief, filed October, 1930.

The petitioners, evidently feeling that the facts in their case are not adequately presented in their main brief, and that these facts are not sufficient to support their contentions, have filed a supplemental brief setting forth new arguments presenting facts chiefly found in the record of the companion case (No. 4, formerly No. 528, Oct. Term, 1928). The following is therefore a reply thereto.

I.

The alleged prior use in this case was rejected by the trial court on conflicting oral evidence introduced in open court.

The alleged prior use in the companion or *"Storrie"* case was accepted by the trial court on a single uncorroborated and unsubstantiated deposition only, taken before the trial out of court, and this deposition concedes that the alleged prior use lacked the vital and essential jet at the outlet of the patent in suit.

The decision of the trial court in the present case, who saw the witnesses and judged their character and credibility, is therefore conclusive.

The decision of the trial court in the companion case, who did not see the witness and had no opportunity to judge his character or credibility, and overlooked the vital defect in that deposition, is inconclusive and should be reversed.

This court is as well able to judge the weight and sufficiency of that deposition as was the trial court.

There is, therefore, no inconsistency in respondent's position that as to the alleged prior use in the present case, the finding of the trial court is conclusive, whereas the finding of the trial court in the other case is not conclusive, but on the contrary may clearly be found erroneous.

Both positions are fully supported by the authorities.

Thus the respondent's position in this case is supported by such decisions as—

> *Adamson* v. *Gilliland*, 242 U. S. 350; 37 Sup. Ct. Rep. 169, 171;
>
> *Davis* v. *Schwartz*, 156 U. S. 631; 15 Sup. Ct. Rep. 237,

and other authorities.

And the respondent's (Petitioners there) position in the other case is supported by such authorities as—

Eibel Process Co. v. *Minnesota & Ontario Paper Co.*, 261 U. S. 45;

Singer Mfg. Co. v. *Herman Cramer*, 192 U. S. 265, 275; 24 Sup. Ct. 291;

Western v. *Robertson*, 142 Fed. 471; 73 C. C. A. 587;

Sanitary Refrigerator Co. v. *Winters*, 280 U. S. ; 74 L. Ed. (Advance Opinions, Nov. 1, 1929, Decided Oct. 14, 1929).

I (a).

Furthermore, the finding of the trial court in the other (*Storrie*) case was contrary to the rule in this court that a prior use to invalidate an issued patent must be proved "by evidence so cogent as to leave no reasonable doubt."

Derring v. *Winona Works*, 155 U. S. 286, 300;

T. H. Symington Co. v. *National Malleable Castings Co.*, 250 U. S. 383, 386;

Eibel Process Co. v. *Minnesota & Ontario Paper Co.*, 261 U. S. 45, 60.

The single deposition in the present case was not only purely recollection of the witness who gave it—after a lapse of more than twenty-two years—and unsubstantiated by any contemporaneous record or other tangible thing, but contains a frank *admission* by that witness (R. 598, *Storrie* case) that the experimental apparatus had no "air on the bottom," *the vital and essential feature* of the patent in suit and its claims.

I (b).

There was no corroboration or substantiation of the Leake prior use deposition.

The three documents referred to by the courts in the Ninth Circuit (see Op., Storrie R. 669) all originated *years after* Leake's alleged prior use and *more than a year after McMichael had made a full and complete reduction to practice* of his invention by filing his application for the patent in suit (Jan. 14, 1907), which was approximately nine months before Leake filed his application (Oct. 7, 1907, *Id.*, Exbt. Bk., 454 and 332).

These documents and the reasons for their utter lack of value are as follows:

1. Leake's preliminary statement in the interference with one Darley (*Id.* 582) involving his application which was also in interference with McMichael.

This was an *ex parte* statement made in 1909, more than *two years* after McMichael's application for the patent, and nearly *four years* after the alleged prior use, and was never substantiated in the interference, which was decided against Leake and in favor of McMichael as the true and prior inventor (Jan. 29, 1910, *Id.* 405). The decision was accepted by Leake, who thereupon *cancelled the claims* which were in the interference—and all claim to the present invention (*Id.* 409-10)—and thereafter contented himself with claiming certain relatively unimportant details of his apparatus which were additions to or alleged refinements of the basic apparatus of the patent in suit (see Leake pat. *Id.* 455).

2. An *ex parte* statement by Leake's attorneys made during the prosecution of his application, *and in 1908*, that Leake had "successfully moved concrete" by "air pressure" and had "actually constructed several plants" where it was done by the apparatus of his application (*Id.* 368, 378).

This laudatory, unverified *ex parte*—and probably hearsay—statement was made by Leake's attorneys *more than a year* after McMichael's application and after Leake presumably had every opportunity to learn all about McMichael's invention. The statement does not say *when* Leake did this, and even if true and supported by proof would not even tend to show that Leake made anything prior to McMichael's application.

Leake himself *admits* that the apparatus made by him for practical use was made after McMichael's reduction of the invention to practice in his application—"sometime in 1907, or so" or in "07 or 08" (Storrie R. 597, 603-4)—also that it was different from this earlier thing which was "nothing but a crude machine" (*Id.* 586); had "nothing automatic," and differed from his *later* machine in that the latter "takes air in on the bottom and top both" (*Id.* 598).

3. The assignment by Leake to McMichael's attorney of his application.

This was made December 2, 1910 (Storrie R. Exbt. Bk. 479), *more than nine months after* he lost the interference to McMichael and actually relinquished all claims to the present invention, conceding McMichael to be entitled to it as the prior inventor (*Id.* 409-10).

There was no understanding or agreement leading up to this, and the reason for the purchase was obviously that Leake showed in his application some later additions or "improvements" which could be used in connection with the McMichael invention, including duplex charging hoppers, and agitators.

And at the time of the assignment there was no claim in the Leake application—nor has there ever been since—which conflicted with McMichael's claims to the invention here involved.

This document, instead of being "strongly suggestive of the inference that McMichael recognized the priority of

Leake's invention," *supports an inference to the contrary.* It indicates that McMichael's interests were in control of both applications, and in position to issue a patent with broad claims to the invention *on either application* to themselves. The fact that they chose to issue the broad patent on McMichael's application, *indicates that they knew McMichael to be the prior inventor.*

McMichael died prior to 1925 (Ulen R., Kirkland dep., Exbt. D, Q96, p. 56); and to sustain an attempt to destroy his adjudged prior inventorship by such documents as these, after a lapse of twenty-two years, is, we submit with respect, repugnant "to every Anglo-American legal concept" of evidence.

> *General Electric Co.* v. *P. R. Mallory Co.* (C. C. A. 2nd), 298 Fed. 579, 585.

As the court also said in that case, in similar circumstances, such a thing is not only "repugnant" "to every Anglo-American legal concept," but something so unfair that anything more unfair cannot be imagined (p. 586).

I (c).

But, as we have seen, Leake himself in his deposition admitted frankly and freely (R. 598, etc.), that his "crude," experimental thing, which he dismantled after he had made a test with it (R. 586), had no "air on the bottom" (R. 598), and that it therefore lacked the vital and indispensable feature of the present invention.

Comparing it with the machine made by him *after* McMichael had occupied the field, he says, referring to this later machine, that it *was not the same in principle.* And answering a very improper question by which it was attempted to lead him into saying that it was, he says:

> "Oh, no. This (the second Leake machine made long after McMichael's filing date) takes air on the bottom and top both,"

and further that with the earlier apparatus:

> "All I did was push the air right out through."

The sketch made by Leake to illustrate his early experimental apparatus also shows *no nozzle at the outlet.* See Defendant's Chicago Exhibit 127 (Exbt. Bk., p. 694).

But had Leake attempted to say that the apparatus tested by him in September, 1905 (R. 583), embodied the invention of the patent in suit, it would have been completely overcome by Leake's oath made more than two years later, in 1907, and forming a part of his application for patent (R., Exbt. Bk. 335), that it had not been publicly used more than two years prior to his application.

But Leake expressly admits that the crude thing tried by him in 1905 at New Orleans and represented by his sketch (Exbt. 127) was used *"only as an experiment"* (R. 602), and was a "little temporary" affair (R. 604) which he tore down after he had used (R. 586).

Nor was Mr. Leake at all reluctant to testify against the present owners of his patent, to whose assignor he assigned many years ago. He shows a willingness to testify fully to the facts, as he recalls them, after a lapse of twenty-two years, but cannot be induced to make statements which he knows to be untrue, or testify to facts which are beyond his recollection.

Leake does not even know who owns his patent (R. 599).

And it is more reasonable to suppose that he was inclined to favor such a powerful interest as the defendant in the other suit, the Great Western Power Company, for whom he first made a deposition (R. 590) than the unknown present owners of his application.

I (d).

On the matter of infringement there was no question of fact before the lower courts in either case, except as to the *operation* of the defendants' apparatus.

In both cases the construction of the accused apparatus was admitted by the defendants (Powers-Kennedy, R. 292, 3, 4; Storrie R., Exbt. Bk. 78, 83-8, 683-4).

The illustration on page 78 of the Storrie case Exhibit book is that of the patent granted to the maker of defendants' machine, Hackley, and is substantially the same as his original drawing forming part of Exhibit 12 (p. 83) which Hackley says shows the defendants' apparatus (R. 73-6). All these illustrations show the air inlets—17, 28ª, etc.—at the back of the vessel, and behind the mass of concrete therein, and the air jets—14, 25ª, etc.—at the outlet of the vessel.

It is admitted that this Hackley patent does "illustrate and describe" the defendants' "Hackley" machine (Respondents' brief, Storrie case, p. 8).

Even the drawing submitted by defendants-respondents' counsel on page 2 of his brief shows these same air inlets —4 and 1—at the back of the vessel and at the front outlet, respectively, **and the District Court in the Ninth Circuit finds these elements present** (Op., R. 614).

In the Second Circuit the courts held, on conflicting evidence, that the defendants' apparatus was operated by them in such a manner as to practice the method or process specified in certain claims of the patent. They also held that the admitted structure infringed the structural claims; and as to this there can be no question since the defendants' structure corresponds to every feature of the machine shown in the patent itself.

In the Ninth Circuit only the structural claims were involved. The controversy as to the particular way in

which the patented device and the accused device operated, was therefore somewhat beside the mark. It arose out of the plaintiff's evidence tending to show that the result accomplished was due to a peculiar action inside the apparatus, known as the slug movement, which evidence was controverted by the defendants. But as the court in the Second Circuit noted this is not material (Opinion, Powers-Kennedy R. 346-7), saying further:

> "To us the dispute seems irrelevant. The patent says nothing which commits the patentee to the slug method of operation."

Therefore, the holding of non-infringement in the Ninth Circuit was due to the fact that the court held the patent *limited to something not described, shown or claimed therein*, and which the court in the Second Circuit holds—and rightly—is *irrelevant*, because the patent is in no way limited thereto.

The court in the Ninth Circuit, therefore, held, that the admitted *apparatus* did not infringe the claims for that *apparatus* because it did not produce the *irrelevant* slug action. This was a decision of *law*. It was an interpretation of the patent as a matter of law.

The court in the Ninth Circuit notes that Hackley himself found the operation of the two machines the same. They say:

> "He testified to having had experience in using appellant's combination and that in so using it the concrete issued in a continuous stream and that in the use of his own device the concrete came out in a continuous stream mixed with air * * *" (Opinion).

They further say, at the end of the Opinion:

> "We think that the slug theory, when all is said, has no bearing upon the merits of the present controversy, for whether or not the appellant's appa-

> ratus operated to deliver concrete in slugs or sections, it is very clear that the Hackley apparatus operates in delivering a constant stream of concrete, interrupted only so far as it is interfered with by the air which accompanies it through the discharge pipe."

But, on what ground they found non-infringement by the *apparatus* of the *apparatus* claims which clearly read upon it, they do not say. They merely affirm the decision of the lower court (R. 621) which found non-infringement because the defendants' apparatus did not have the following four unspecified elements:

1. "Upright cylindrical hopper bottomed container,"
2. "The U bend,"
3. "Upper air save some incidental back pressure,"
4. "Discharge slug fashion as claimed is the invention of McMichael,".

None of these elements is found in the claims of the patent, and none of them is essential to the embodiment of the invention.

The patent does not even call for "upper air." The method or process claims do call for "air *behind* the mass of material" (Claim 4); but this may be upper or rear or in any other place, so long as it is *behind* the mass. However, these method or process claims were not involved in the Storrie suit. But the "incidental back pressure" *is and must be a* pressure behind the mass.

It is evident, therefore, that the courts in the Ninth Circuit held non-infringement, not because of any question of involving features of the patented invention, but because of an error of law in interpreting that invention to include something not included and not intended to be included even in the method claims.

This brings the present case clearly under the language of the decision of this court in

Sanitary Refrigerator Co. v. *Winters* (*supra*),

in which it was said:

> "Furthermore, upon the undisputed evidence the question of infringement resolves itself in each case into one of law, depending upon a comparison between the structure disclosed on the face of the patent and the device shown in the Dent batch, and the correct application thereto of the rule of equivalency. Compare Singer Mfg. Co. *v.* Cramer, 192 U. S. 265, 275, 48 L. Ed. 437, 443, 24 Sup. Ct. Rep. 291."

I (e).

That the two alleged infringing structures are substantially the same, and both substantially the same as that of the patent, will be apparent from a mere comparison of them.

The illustrative embodiment shown in the patent is an upright or vertical chamber or vessel, and the embodiment of the defendants in the *Storrie* case is a horizontal chamber or vessel, like the infringing device in the Ulen suit (12 Fed. [2nd] 929-931), while the defendant's embodiment in the *Powers-Kennedy* case is a vertical or upright vessel.

> (See sheet of drawings, p. 76, Petitioner's Storrie case, brief.)

It will be apparent, however, that if the device of the patent is laid on its side, or the Storrie (Hackley) apparatus placed in upright position with its outlet at the bottom, the two are substantially identical in all essentials. The only difference in the operation due to the change of position is that when the chamber is horizontal some means must be provided for moving the mass of materials toward the outlet, this being done by gravity when the chamber is upright. In the Ulen infringing apparatus, this was done by means of a plunger which pushed the

material forward toward the outlet. In the Storrie apparatus, it is done by air pipes in the bottom of the vessel located between the rear end and the outlet. In the horizontal machine made by the licensee (The Ransome Company) under the patent, this is done by a screw conveyor (Storrie R., Exbt. Bk. 102-105).

But whether the vessel is upright or horizontal, the construction and arrangement of the air pressure devices and the vessel, and the result, are the same.

Thus, in the patent, air pressure behind the mass is supplied by the upper air pipe (8) near the head of the vessel, and the velocity nozzle at the outlet (10) is the pipe extending into the neck of the vessel. In the Storrie device the air pressure behind the mass is supplied by the pipe entering through the head at its lower part, and the velocity nozzle is the pipe extending into the neck of the vessel. The air pipes in the bottom of the vessel will also supply air pressure behind the mass, but would not alone and without the air pipe in the head or back end move all the concrete forward to the outlet.

In the Powers-Kennedy apparatus, pressure behind the mass was first supplied by the pipes at the top of the vessel, and, later, by air exploding upward from the outlet nozzle and being trapped in the top, and the velocity nozzle at the outlet is the pipe entering the neck of the vessel where it joins the conveying conduit.

Only a part of the patent's claims are limited to any location of the air inlet for supplying air behind the mass. The sealed chamber will always *trap compressed air behind this mass, no matter where the air inlet is located,* and the velocity nozzle at the outlet will supply this, if it is not supplied by a separate pipe.

Accordingly, the courts in the Second Circuit found that the defendants infringed all the claims when they used the top inlet and only a part of them when they used the

nozzle at the outlet only (Opinion, R. 328, and [D. C.] R. 327). It was admitted that there was pressure behind the mass in the Powers-Kennedy device when only the nozzle at the outlet was used, and the court so held (*Id.* R. 347—bottom).

In all of the claims which are involved in both suits the "chamber for containing concrete forming materials" with an outlet and a "compressed air inlet pipe leading through the chamber wall and terminating" "near the opening into the conduit," or their equivalents (Claim 2) with means for supplying compressed air "back of [or "behind"] the mass of materials" (Claims 4 and 17) or its equivalent, *are essentials.* These essentials are found in the apparatus of both defendants. **Therefore no different interpretation of the claims is necessary to bring these two devices within their proper and intended scope and meaning.**

The vital and essential element in all the claims common to both suits, is **the nozzle at the outlet cooperating with the pressure behind the mass. This is fully embodied in the apparatus of both defendants, and is not found in the prior art.** Therefore, both defendants have appropriated the essence of the invention and the features which distinguish it from all prior devices, and have enabled it to convey concrete pneumatically, *which these prior devices were unable to do.*

II.

The patent is for a pioneer invention.

No prior device ever conveyed concrete by compressed air in any manner (Opinion, 2nd C. C. A., R. 344).

No prior device ever employed ("static") pressure behind a mass of concrete in a chamber with ("velocity") pressure directed into the mass at the outlet of the chamber.

It was this combination of static and velocity pressure that made the conveyance of concrete by air pressure possible.

Apparently no prior inventor thought that the mass of rocks filled in with mortar which constitutes concrete (see Pat., p. 2, lines 100, *et seq.*) could be conveyed by air pressure. The desirability of such a thing was realized for at least thirty-five years before McMichael's invention, when Smith, in 1872, proposed to convey "concrete" *in water, as a fluid* (Smith Pats., Storrie R. 481-485), which, of course, would have *destroyed the concrete.*

This mass of rocks intimately mixed with sand and cement could not be blown by a blast of air, like sand, grain and other finely divided substances, because it could not be carried in an air current at any obtainable pressure, and would simply jam and plug the conduit after the light fine material had been blown out of it, and if this could have been done it would have *unmixed* the concrete (Opinion D. C., Powers-Kennedy, R. 327).

Nor could this mass of rocks be forced through a conduit like a liquid, because it is, and must be, at least *90 per cent. solids and 55 per cent. rocks* (Robinson, Storrie R. 351; Powers-Kennedy Spec., R. 296; Kennedy R. 206), *and rocks will not flow.*

If any prior inventor ever thought of using a velocity jet at the outlet of the vessel to cause this rocky mass to shoot through the conveying conduit under the air pressure behind it (it would otherwise do nothing but make it jam and plug the pipe) he apparently did not think it worth trying out. Even after McMichael did it engineers would not believe it (Ulen R. 45).

It remained for McMichael to discover that this heavy, rocky mass could be conveyed through a conduit by air pressure by placing a velocity jet at the outlet of the vessel to break up the mass and make it shoot through the conveying conduit and to great distances and elevations

(see Respondents' Main Brief, pp. 15-32, and Storrie R. 105-7).

His invention has accomplished a great work, has gone into universal use, has made possible great enterprises attended by the greatest difficulties, and under the most adverse conditions (*Id.* pp. 32-36; Ulen Op., D. C., 12 Fed. [2nd] 929, 931), and has supplanted all other methods of tunnel lining (Storrie R. 101-3).

It is seldom that a patent has come before this court with such a record of accomplishment, preceded by such an utter failure of accomplishment.

The courts in the Ninth Circuit failed to appreciate this record, and apparently failed to grasp the true nature of the invention. They appear to have overlooked *the very essence of the invention,* which resides in *the duofold pressure behind the mass and at the front of the mass.* At any rate, in comparing the patent with the prior art, they ignored the critical character of the velocity nozzle at the front of the mass and held the invention substantially anticipated by apparatus in which this element was entirely lacking.

Thus the court says in its opinion, referring to the Smith machine, that it contained all the features of appellants' patent "*except* the nozzle for admission of air near the point of exit," and in comparing it with the Duckham patent, which also lacked this element or any suggestion of it, that one of his pipes for the admission of compressed air in the tank (nowhere near the outlet) was "*locatable* at the exit."

As well might one say that Shakespeare's play of Hamlet was anticipated by an earlier play which had all the characters "except the Prince of Denmark," or that an earlier play anticipated it because it could have portrayed such a character as Shakespeare portrayed it. As well might it be said that one who has located an oil well in a widely extended territory, where others were drilling

without success, is not entitled to the reward of his discovery, because the drill holes of the others were "locatable" in the same spot.

II (a).

That all the prior patents and practices lack this vital and essential jet at the outlet of the pressure chamber is sufficiently shown by the following brief summary.

The Duckham British patents 4,400 of 1875 and 15,348 of 1885 (Storrie Exbt. Bk. 598, 603 and 611) propose to discharge water and mud from the huge barge tank of a dredge by putting air pressure on the tank and thus depositing it on the shore. No other means for discharging is shown or described in the 1875 patent, but the suggestion is made (*Id.* 601) that

> "I *prefer* to inject compressed air (with or without an admixture of water) supplied by force pump or other means through a number of nozzles at the bottom of the tank, said nozzles being pointed *towards* the outlet."

But where located and how many feet from the outlet is not stated. He says:

> "By this means the particles are prevented from settling, and are *kept in suspension* until the whole is expelled from the tank. Compressed air *may* moreover be admitted into the discharge pipe with the same object."

The 1885 patent, referring to the 1875 apparatus, says that the discharge was

> "assisted by compressed air and water injected at the bottom of the tank for the purpose of *agitating the mud* and preventing thick deposit" (*Id.* 608). (All Italics in quotations ours.)

The purpose of the nozzles, therefore, was to *agitate the mud* and prevent it from settling on the bottom. They had no other function. If located at the outlet from the tank into the discharge pipe in the form of nozzles, *they would have interfered with the discharge* by blowing through and breaking up the column of liquid, "escaping through the discharge pipe and carrying with it all the liquid" (see Opinion, 9th C. C. A., 1887 article) mixed with mud, leaving the heavier portions of the mixture behind.

The article referred to by the court in the Ninth Circuit says, that blowing through clay or stiff mud by the pipes in the bottom of the tank "was easily rectified by re-arranging and *increasing the size of the* large injection nozzles." This means that they were *not velocity nozzles at all,* but compressed air inlets delivering a large volume of air which would *spread out and bubble up through the mud.*

That no such location or function as that of the patent in suit was ever thought of, is shown by Duckham's statement (*Id.* 599, 601):

> "To prevent the choking of the pipes a screen or grating is provided through which the mud or spoil passes before it enters the outlet pipe."

This would, of course, break up the material and destroy any jet action. Furthermore, a grating could not be used with concrete, as it would cause the rocks to form *a complete dam,* if they ever got that far.

The Duckham patents

1. Are for handling *liquid in a column.*

2. Contain no suggestion that concrete or similar material can be handled in any manner by air pressure.

3. *Give no suggestion of a velocity nozzle located at the outlet of the chamber into the conveying conduit, for any purpose.*

4. Disclose a structure which differs greatly from that of McMichael, and could not be used for handling concrete at all.

5. Are old *foreign* patents without definite description of anything relating to the present invention, and are therefore irrelevant.

Permutit Co. v. *Harvey Laundry Co.* (C. C. A. 9th), 279 Fed. 713, 718,

citing,

Seymour v. *Osborne*, 11 Wall. 516, and other authorities.

Permutit Co. v. *Wadham* (C. C. A. 6th), 13 Fed. (2d) 454, 457.

The Smith U. S. patents of 1872 (Exbt. Bk., pp. 481 and 484) propose to use "a quantity of water equal to about *three-fifths* of the entire mass of materials" (R. 481, Col. 2), or at least 37½ per cent. of water, so that "a liquid or semi-liquid mass results which can be flowed through pipes" (*Id.*), and to then force this liquid through a discharge pipe by simple air pressure behind it. **No velocity nozzle or other nozzle located anywhere is suggested.**

These Smith patents

1. Would so dilute the cement in the concrete mixture as to render it worthless, since the maximum amount of liquid permissible is about 10 per cent. (R. 591); and Smith proposed to use *nearly four times* that amount.

2. Gave no hint or suggestion of the vital and indispensable nozzle at the outlet from the chamber into the conveying conduit, which has made the patented invention a success, where all prior devices were useless for conveying concrete or the like.

3. Merely show that thirty-five years before McMichael the desirability of conveying concrete by

compressed air was realized, and that at that early date it was proposed to ruin the concrete mixture in order to do it.

4. Were mere paper patents which never contributed anything to the public good.

5. Were for a liquid column apparatus not usable for concrete, which is at least 90 per cent. solids, and principally a mass of rocks.

The maker of the defendants' (Storrie) apparatus, Hackley, who knew all about the patented machines (R. 72, 91), after making a test with an alleged Smith apparatus and admitting that it failed to properly discharge the rock (R. 434) finally concedes that it is not satisfactory, **because it does not have the jet at the outlet,** and that he uses the jet at the outlet for the reason that it gives **"a different and better action"** (R. 435-6).

And this is the best that the biased witnesses could do, *in camera,* with the Smith machine, at the instance of the Pacific Gas & Electric Company, another alleged infringer of the patent in suit (R. 468-470).

It is obvious that the defendants are not using the Smith apparatus, but are using the apparatus of the patent in suit, and contesting this litigation, because the present apparatus is operative and perfectly efficient, whereas the Smith apparatus is worthless.

The Kolsche German patent of 1882 (Exbt. Bk. 182-b) is for nothing but a kinetic air flotation device for "conveying slack (coal dust) sandy or granular material by means of a current of air." The material is *dropped* from the bottom of the vessel *in a thin stream* into a large blast of air rushing through a large conduit, and is carried along in *suspension. It has no nozzle or anything of the sort* at or near the outlet of the chamber, or anywhere else, and could not be used for concrete or any similar material in any way.

It is an old foreign patent disclosing nothing relevant to the present invention.

The Goldie patent 707,840 of 1902 (Storrie Exbt. Bk. 514) is for nothing but a crude impracticable apparatus for blowing dry cement, or cement and sand, under railroad ties, by means of a jet of steam. The dry material must first *gravitate* from a hopper down through a long narrow pipe to the nozzle, and if the nozzle met with any resistance, it would blow up through the top of the hopper which is not sealed and has no air pressure in it.

The Goldie patents 576,128 and 9 (*Id.* 498 and 506) are crude predecessors of the later Goldie patent above mentioned, and are for substantially the same impossible scheme. In both of them, the dry material is contained *in an open hopper*, gravitates down into the small pipe and is supposed to be blown under the railroad ties by pressure supplied to this pipe by a small hand pump.

The Farnham patent 747,396 of 1903 (Ulen R. 347) shows only a "sand-blast" apparatus, for producing a blast of sand carried in a current of air, for cleaning and other purposes. This is fully discussed in our main brief at pages 53-55.

The Farnham patent shows:

1. No jet or nozzle at the outlet but a *suction* jet (11) *at the bottom of a long, narrow pipe* extending from the *flat* bottom of the vessel, and obstructing the mouth of that pipe so as to project air "across the mouth of the discharge-pipe 2" (Spec., p. 1, lines 100, *et seq.*).

2. No cooperation between the pressure in the tank and the suction jet or nozzle, since the sand flows "by gravity" (*Id.* line 18) in a small stream from the tank down to the point where it is acted upon by the suction and blast of the nozzle and blown through the small pipe leading to the work, suspended in the air.

3. No nozzle of any description at or near the outlet of the vessel.

4. And would have to be rearranged and redesigned to convey concrete or the like, *and with the teachings of the McMichael patent in suit in view.*

The Warren patent 671,303 (*Id.* 650) is for a "mixer for sand-blast apparatus," and shows a hopper with a small bottom discharge pipe through which materials (loose sand, etc.) pass in a small stream from the hopper to a chamber in a pipe through which a current of air passes, where it is caught up by the air, "with which it mingles and by which it is carried through the chamber into the flexible tube M and discharged through the nozzle O" (Spec., p. 1, lines 63-71). It shows nothing not shown in the Farnham patent. It does not even show a suction nozzle, nor a nozzle of any kind.

The Sickels and Butler patents 99,360 and 660,946 (Storrie, Exbt. Bk. 514 and 654) are even less relevant than the foregoing kinetic or air flotation patents.

The Canniff patent 873,345 and McIlvrid patent 958,421 (R. 318 and 323) are merely for machines which mix and discharge grout, a thin *liquid* composed of sand, cement and water, which is forced in a liquid column through pipes, like any other liquid. They also lack the nozzle at the outlet of the chamber (they have no nozzle at all) which is an indispensable element of the patent in suit.

The wholly uncorroborated oral testimony of Mr. McCormick to the effect that he used air in an apparatus like that of the Canniff patent to assist the discharge of the liquid grout (Storrie R. 403-420), nearly thirty years before he testified, based as it is upon pure unaided recollection, is unbelievable. The courts in the Ninth Circuit evidently gave it no credence. Furthermore, it has been sufficiently shown that the use of air at the outlet would break up the column of liquid (McCormick never used anything but grout) and make it ineffective for grouting.

McCormick's recollection as to date and the particular character of the apparatus used by him with his "paint-like grout" (*Id.* 415) has evidently been reconstructed with the exigencies of the present situation in view.

From the foregoing it will be seen that all the prior patents relied on by the defendants—except pump patents, which are entirely irrelevant—belong to one of two classes, viz.:

> **1. Patents for kinetic or air flotation devices for handling light or finely divisible materials by conveying them in suspension in a current of air, and**
>
> **2. Patents for apparatus for moving a column of liquid by means of air pressure behind it;**

And that neither of these could be used to convey concrete which is composed almost wholly of heavy cohesive solids intimately mixed and proportioned and the bulk of which is broken rock or stones; and further,

That McMichael's apparatus belongs to a third and new class, which has no precedent in any art, the characteristics of which are (1) a chamber in which solids are maintained under pressure forcing them to the contracted outlet of the chamber, and (2) a velocity nozzle at the outlet of the chamber to the conduit directed into the materials and into the outlet to shoot them through the outlet and through the conduit in a mass or masses to the point of application.

No pneumatic apparatus for conveying coarse, heavy solids was known before McMichael's invention.

III.

The invention of the patent is and always has been the same from the filing of the application in 1907 up to the present date.

The criticism based on the alleged enlargement of the invention has been overruled by the courts in the Second Circuit no less than four times, viz:

By the District Court and the Court of Appeals in the Ulen suit and by both courts again in this present suit. **It has no merit in fact or in law, and may be briefly answered by the following summary:**

1. The drawing of the patent is the drawing originally filed in the application; not a line nor a letter has been changed.

2. The original specification described that apparatus and its method of operation with ample clearness and detail to enable any one skilled in the art to make and use them fully, and, in all their advantages, which is all that the Patent Statute (U. S. R. S. 4888) requires.

3. The Patent Statute does not even require a full description in the application, but only in the patent as finally issued.

4. A patentee has the absolute right to amplify the description of his invention while his application is pending, so long as it is fairly based upon his original disclosure, in the drawings or in the specification, or both.

Westinghouse v. *Metropolitan* (C. C. A. 2nd), 290 Fed. 661;

Diamond Rubber Co. v. *Consolidated Tire Co.*, 220 U. S. 428, 435;

Cleveland Foundry Co. v. *Detroit* (C. C. A. 6th), 131 Fed. 853, 857;

Overland v. *Packard*, 274 U. S. 417; 71 L. Ed. 1131.

5. If the patentee wishes to depart from the original disclosure of his application, while his application is pending, he may do so, provided only that he files a supplemental oath to the effect that the invention was not published or used, etc., two years prior to his original application, and this merely to satisfy the Patent Office on that point, under Section 4892, of the Patent Statute. *This McMichael did* (Ulen R. 251; Storrie R. 273), *although it was not necessary*, because the additional claims and description were clearly based on the original disclosure.

6. Some of the claims in the patent are of substantially the same scope as claim 3 of the original application, and claim 3 of the application is *substantially identical* with claim 2 of the patent. (See original claim 2, Storrie R. 201, Ulen R. 202.) This claim is in both suits.

It is therefore apparent that the patent as issued is for the original invention, supported by the original and supplemental oath, and that the description and claims added during the pendency of the application are properly in the patent.

(See also discussion this subject, pp. 36-47. Respondent's Brief, and decisions quoted.)

IV.

No attempt has been made to alter the patent or change its meaning in any way since the patent was granted and became a public document.

The slug theory of operation is not, and never was, a part of the patent or any of its claims, but is an *explanation* of the astonishing fact that the invention makes it possible for a jet of air acting under the pressure behind the mass and located at the critical point, to shoot tons of rocks carefully mixed with sand, cement and a little water, at express speed, thousands of feet and up to high

elevations, without disturbing the mixture of these heterogeneous elements.

It was hard in the beginning to make engineers believe that this could be done (Ulen R. 44), and the plaintiff, therefore, thought that the court should be given its own best explanation of the reasons for this remarkable performance. This was appreciated by the District Judge, in the Second Circuit, in the *Ulen* case, who referred to it in his opinion (12 Fed. [2nd] 929), and whose decision was endorsed by the Court of Appeals (*Id.* 931).

The action is not kinetic or air flotation action, nor liquid column action, such as prior devices employed for finely divisible solids, such as sand, grain, etc., or liquids such as mud, cement (as grout), etc., carried in water.

Even the testimony for both defendants in these cases proves that. Their witnesses state that the concrete and air come out in "a solid stream" (Powers-Kennedy R. 22, Qs189-191), and although a considerable volume of air necessarily discharges with the concrete, there are no bubbles or entrained air mixed with the concrete (*Id.*).

This was also the finding of the court in the *Storrie* case based on the testimony of the defendants' witnesses (see Wilkins, Storrie R. 446). The court said (Storrie R. 618):

> "* * * that the concrete discharges in a continuous aerated or mixed stream of concrete and air and not at all in any slug formation."

(See also Opinion, 9th C. C. A., last page.)

The question, however, was not how the concrete was discharged at the distant outlet of the conveying conduit, but how it was charged from the chamber into the other end of the conduit.

The slug theory is adhered to, in spite of the fact that the courts in the Ninth Circuit have found against it, as the only satisfactory explanation, of how a mass of solids,

principally rocks, can be conveyed by compressed air through a pipe to distances up to approximately a mile, smoothly, without disintegration, and without the inevitable plugging of the pipe at every step and on each new discharge, which would otherwise be the ruinous result.

But, after all, the slug theory is merely a **theory,** and has nothing to do with the interpretation of the patent and its claims, which are not limited in any way or dependent upon the correctness of that theory.

Accordingly, the Court of Appeals in the Second Circuit, after the decision of the District Court in the Ninth Circuit, said (Powers-Kennedy R. 344):

> "* * * nobody before McMichael had used a pneumatic apparatus to transport concrete,"

and (*Id.* 346):

> "To us the dispute seems irrelevant. The patent says nothing which commits the patentee to the slug method of operation."

And again (*Id.* 347):

> "But whether the concrete goes forward as we imagine, or in some other manner, there is no sufficient reason to suppose that defendants' machine does not operate in the same manner as plaintiff's, whatever that manner may be."

The slug theory is therefore not an attempt to change the patent or read anything into it, but merely a satisfying *explanation* of its remarkable performance.

Nor is any theory of operation necessary to apply the claims to defendants' device, which has all the elements of these claims, and produces precisely the same result.

The courts in the Ninth Circuit have not found to the contrary, but, as we have seen, have without warrant *read*

into them the slug theory, and unimportant structural details, in order to find non-infringement.

(For further discussion of these questions see Respondent's Main Brief, pp. 97-101, and, on infringement, pp. 63-96.)

The "nose of wax" decision (*White* v. *Dunbar*, 119 U. S. 47) involved a *reissue* patent in which the language of the claims had actually been changed to change the nature of the original invention. It has no application here.

The Kirkland Article, written by a person who was not connected with the owners of the patent, but merely with a licensee at that time, is wholly irrelevant and incompetent, and was ignored by the court, after proper objection (Powers-Kennedy R. 104). The statement that Mr. Kirkland was then Chief Engineer for the patentee or was connected with the patentee, is erroneous (*Id.*).

This article was published more than three years after the patent was granted (*Id.* 103), and more than six years before the commencement of this suit. Furthermore, it was repudiated by the author, in this suit and the earlier Ulen suit, as incorrect, after actual tests (*Id.* 105-6). It is also shown to be erroneous by the statement of the patentee, made to the Patent Office through his attorney during the prosecution of the application (*Id.* 106, Ulen R. 267; Storrie Exbt. Bk. 296).

All that Kirkland's article could indicate, if it were admissible, is that the operation of the patented apparatus is so obscure and almost inexplicable that even an engineer familiar with the apparatus could misinterpret its internal *modus operandi*.

(For further discussion of this matter see Appellee's Main Brief, pp. 108-9.)

V.

The velocity nozzle at the outlet is and always has been the most vital element of the patented combination, and essential to the method of the patent.

It was shown in the drawings, described and claimed in the original application (see Spec. p. 1, lines 60-64, and p. 2, lines 21-24, which correspond with the original specification). To answer the unfounded contention of the defendants that the velocity nozzle has been introduced or magnified since the patent was granted, it is only necessary to quote briefly from the description in the specification, which says, *inter alia* (p. 2, lines 50, *et seq.*):

> "The lower pipe 10, however, serves to direct a jet of air moving at a considerable *velocity* directly against portions of the mass as they move toward and into the discharge duct. The two pipes thus act in very different ways, the upper pipe supplying air which acts by *pressure* and the lower pipe supplying air which acts by *velocity*."
>
> (See also p. 2, lines 21-50 and 68-93.)

It is also distinctly specified in the claims of which claim 2 serves as an illustration, saying

> "* * * and *another* compressed air inlet pipe leading through the chamber wall and terminating within the chamber near the opening into the conduit in a *nozzle directed toward said opening*."

And it was this velocity nozzle, located at and directed toward the outlet of the chamber into the conveying conduit which at once made the McMichael invention what it is and distinguished it both in genus and species from all previous devices.

It is not a suction nozzle, limited to a pressure of less than the atmospheric pressure of fifteen pounds, created

behind it, nor an agitating or stirring nozzle for loose or floatable materials, but a cutting, driving jet located at the critical point where the rocky concrete mass would jam, arch or plug, and acting by its velocity on the obstinate mass of solids to break the jam—or rather prevent it—and shoot these solids intact to great distances and great elevations.

For a further discussion of all of the foregoing matters, the court is referred to this respondents' main brief.

Respectfully submitted,

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